



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,035	12/28/2001	Young Ho Bae	2658-0280P	3483
2292 7590 04/13/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER KACKAR, RAM N	
			ART UNIT	PAPER NUMBER
			1763	
SHORTENED STATUTORY PERIOD OF RESPONSE		NOTIFICATION DATE	DELIVERY MODE	
3 MONTHS		04/13/2007	ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/13/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/029,035

Applicant(s)

BAE, YOUNG HO

Examiner

Ram N. Kackar

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) 13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-12, 15 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/8/2006 has been entered.

Drawings

2. The drawing corrections received on 10/19/2004, 5/11/2005, 5/3/2006 and 12/8/2006 are not acceptable. The drawing changes do not remove the deficiencies of the original drawings dated 12/28/2001 submitted with the application.

The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).

The drawing deficiencies at minimum include drawings for load and unload of the substrate indicating clearly, the elements claimed, so as to enable one to locate them on the drawings. These should include elements whose distances and sizes are claimed. It is suggested that the drawings should depict features of the invention by numerals with description in the specification.

Art Unit: 1763

It is further required that no new matter is added.

The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

3. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms that are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. It is further required that no new matter is added. Piece meal changes to the specification submitted on 3/1/2004, 10/19/2004, 5/11/2005, 5/3/2006 and 12/8/2006 have not made it more clear concise and exact as per the requirement.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-8, 10-12 and 15-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In this instance sliding mechanism for claimed load and unload of the substrate is not described in drawings and specification. Included in missing items is the description and drawing

Art Unit: 1763

to indicate complete sliding portion, its distance from an edge of the groove and position and orientation of the robot arm with and without substrate during unload, load and sliding.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2, 3, 12 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2 and 3 length of the sliding portion being 3 or 10 mm is not understood, since the delimiting points of this distance are not indicated anywhere.

In claim 12 the second planer portion being horizontally contiguous with the first planer portion is not understood.

In claim 15 the robot arm is recited to be "configured to incline the glass substrate at substantially 85 degrees". However, there is no disclosure that the robot arm is configured in any way to cause this to happen. As best understood, the substrate bends due to its own weight. Further, since the angle of bend depends upon the weight of the substrate, it may not always be 85 degrees.

It is noted that the substrate, being a content of the claimed apparatus does not impart patentability to the apparatus.

Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. **Claims 1-3, 6, 11, 12 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by DuBois et al (US 5855687).**

DuBois et al disclose a vacuum deposition apparatus for CVD with heatable susceptor (Col 3 line 22-42 and lines 38-40), lift pins and robot arm (Col 5 lines 49-51), groove around susceptor to collect deposition so that build up may not cause problem by sticking to the substrate (Col 4 lines 43-48).

As discussed above robot arm sliding on the susceptor would be an intended use.

Regarding claims 2 and 3 the area for sliding is more than 10mm from the groove (Fig 3-44) to allow the substrate to slide.

Regarding claim 12 sliding portion is a part of susceptor on whose top surface substrate sits. This part has several planer surface portions like at the bottom of the susceptor or on the side. The substrate support planer surface is obviously at a greater height.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 1-8, 10-12, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicants admitted prior art (AAPA) in view of Tepman et al (US 5589224) or alternatively in view of DuBois et al (US 5855687).**

Applicants admitted prior art (AAPA) as disclosed in Figs 1 to Fig 4 A, B, C and D and the specification paragraphs 2-23 discloses all limitations of these claims except the groove to collect material disposed on the susceptor.

Tepman et al disclose a vacuum deposition apparatus for PVD, CVD, sputtering, ion implanters etc (Col 1 lines 10-19), lift pins (Fig 1-30), robot arm (Fig 4 and Col 2 lines 13-16) and groove around susceptor to collect deposition so that build up on the surface of the susceptor may not cause problem by sticking to the substrate (Fig 3-38 and Col 4 lines 54-63).

Similarly DuBois et al disclose a vacuum deposition apparatus for CVD with heatable susceptor (Col 3 line 22-42 and lines 38-40), lift pins and robot arm (Col 5 lines 49-51), groove around susceptor to collect deposition so that build up may not cause problem by sticking to the substrate (Col 4 lines 43-48).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have grooves on the susceptor in order to avoid problems of substrate sticking.

Art Unit: 1763

11. Claim 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over DuBois et al (US 5855687) in view of Rempei Nakata (US 5119761).

DuBois et al as discussed above do not disclose the susceptor to be made of Quartz.

Quartz susceptors are common for thermal processing for its thermal insulation properties.

Rempei Nakata discloses a quartz susceptor (Fig 12-106 and Col 1 lines 44-49).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have a susceptor of quartz for its excellent thermal properties of insulation.

12. Claims 5 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over DuBois et al (US 5855687).

DuBois et al disclose groove but do not disclose different shapes of the bottom of the groove. Since the purpose of the groove is to collect film forming material and applicant has not disclosed any special advantage of a particular shape at the bottom they are considered art recognized equivalent and therefore obvious.

The courts have held *regarding change in shape*: It was held in *re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) that the shape was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular shape was significant. (Also see MPEP 2144.04(d)).

Similarly, *regarding change in size/proportion*: It was held in *re Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984) that where the only difference between the prior art and the claims was a

Art Unit: 1763

recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

13. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over DuBois et al (US 5855687) in view of Robertson et al (US 5366585).

DuBois et al as discussed above do not disclose the susceptor to be of rectangular shape

Robertson et al disclose a rectangular susceptor for a rectangular substrate (Fig 2B).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have a rectangular susceptor to process a rectangular substrate.

Response to Amendment

Applicant's arguments filed 12/8/2006 have been fully considered but they are not persuasive.

Applicant's amendment to specification and drawings are not acceptable as they are inadequate in explaining the claimed invention clearly and possibly contain new matter.

Regarding "sliding" applicants characterization of it being inherent is entirely misplaced. Sliding is not a structural feature but only a functional limitation, which has no patentable weight. Nowhere, "sliding" function is determined as inherent.

Applicants argue that conventional art is not a prior art without giving any reason for asserting this.

Art Unit: 1763

The original specification devotes paragraphs 2-23 in the sections of DESCRIPTION OF THE RELATED ART part of BACKGROUND OF THE INVENTION and Fig. 1 to 4D in drawings to describe the state of the existing art and the problems encountered in it.

In paragraph 1 directed to FIELD OF THE INVENTION and in paragraph 24 directed to SUMMARY OF THE INVENTION the object of the invention is disclosed to be to correct the problems of the conventional art by providing an apparatus for minimizing the breakage of the glass caused by the slide miss of the glass.

It is claimed that problems in the conventional (prior) art relate to improper sliding causing breakage. This clearly points to a sliding function existing in the prior art.

Also disclosed are the function of film forming material and substrate getting caught by it. Some of this description has gaps and is not clear, concise and exact according to the requirement.

Further, original drawings do not show any load or unload sequence and show the substrate as sitting horizontally on the susceptor (Fig 5-10C). Piece meal amendments to drawing to show substrate at an angle appear to be a new matter.

Therefore, it is clear that the only structural difference relates to grooves.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

Art Unit: 1763

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ram Kackar

Primary Examiner AU 1763